PATENT CLAIMS

1. A method for forming a good contact surface on an electrolysis cell busbar used in the electrolysis of metals, where at least the surface of the bar is made of copper and the contact surface forms of an area on to which an electrode is lowered, **characterised in that** a transmission layer is formed on the copper contact surface of said busbar, after which the contact surface is coated with silver or silver alloy using soldering or thermal spraying technique, wherein the coating material forms a metallurgical joint with the copper and the transmission layer.

2. A method according to claim 1, **characterised in that** the transmission layer is of tin or a tin-dominant alloy.

3. A method according to claim 1 or 2, **characterised in that** the silver alloy is silver-copper.

4. A method according to any of the above claims, **characterised in that** in addition to a busbar the electrolysis cell is equipped with a potential balancing bar, on which a transmission layer is formed on the copper surface that comes into contact with the electrode, after which the contact surface is coated with silver or silver alloy, wherein the coating material forms a metallurgical joint with the copper and the transmission layer.

5. A method according to any of the above claims, **characterised in that** the busbar is continuous in the longitudinal direction, so that the coating layer is formed along the whole length of the busbar.

6. A method according to any of the above claims, **characterised in that** the contact surfaces of the busbar onto which the electrode is

lowered, are formed by notching or grooving, wherein the coating layer is formed on the notched or grooved areas of the busbar.

7. A method according to claim 1, **characterised in that** the thermal spraying technique is based on gas combustion.

8. A method according to claim 1 or 7, **characterised in that** the thermal spraying technique is high velocity oxy-fuel spraying.

9. A method according to any of the above claims, **characterised in that** the highly electroconductive coating material is in powder form.

10. A method according to claim 1 or 7, **characterised in that** the thermal spraying technique is flame spraying.

11. A method according to any of claims 1 – 7 or 10, **characterised in that** the highly electroconductive coating material is in wire form.

12. A method according to any of the above claims, **characterised in that** the contact surface is subjected to heat treatment after coating.

13. An electrolysis cell busbar for use in the electrolysis of metals, whereby at least a surface section of the bar is made of copper and a contact surface forms an area onto which an electrode is lowered, **characterised in that** a transmission layer is formed on the contact surface of the busbar, after which the contact surface has been coated with silver or silver alloy using soldering or thermal spraying technique, wherein the copper, transmission layer and coating material have formed a metallurgical joint.

14. A busbar according to claim 13, **characterised in that** the transmission layer is tin or a tin-dominant alloy.

15. A busbar according to claim 13 or 14, **characterised in that** the silver alloy is silver-copper.

16. A busbar according to any of claims 13 - 15, **characterised in that** the busbar is continuous in the longitudinal direction, wherein the coating layer is formed along the whole length of the busbar.

17. A busbar according to any of claims 13 - 15, **characterised in that** the busbar contact surfaces onto which the electrode is lowered, are fabricated by notching or grooving, wherein the coating layer is formed on the notched or grooved areas of the busbar.

18. A busbar according to any of claims 13 - 15, **characterised in that** the bar is a potential balancing bar.